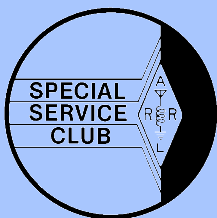




The Raleigh Amateur Radio Society's **EXCITER**

GET INVOLVED

- RARS General Membership meeting: Second Tuesday of the month.
- The RARS net meets every night except Saturday @ 8 p.m. on 146.640.
- The RARS Technical & Trader's net: Saturdays @ 8:00 PM on 146.64.
- RARS meets for a monthly dinner on the First Tuesday of each month.



PUBLIC SERVICE EVENTS

Interested in helping? Visit
<https://www.rars.org/public-service.php>

frequently for our 2021
ham public service
schedule.

RARS General Meeting

Main Topic: 3D printing

By: Paul Holzworth, KD4BFN

Date: January 11, 2022

Time: Meeting at 7:30 PM, informal
gathering at 7PM on Zoom.

Where: Zoom

RARS Net Monthly Summary

December 2021 net report

31 nets

482 checkins

968 minutes

Happy New Year to all!

Julie KT4JR

RARS Officers

PRESIDENT

John Honeycutt
N8ZU
919.417.2477
jfh49@bellsouth.net

VICE PRESIDENT

Tom Lewis
N4TL
N4TL2@yahoo.com

SECRETARY

Mark Kilmer
KM4JRH
919.676.0110
mark.kilmer@gmail.com

TREASURER

Greg Seamster
KE4PAX
919.859.0029
KE4PAX@arrl.net



The Raleigh Amateur Radio Society

The Raleigh Amateur Radio Society, Inc. (RARS) was founded in 1969 and continues to serve and support the amateur radio community in the greater Triangle area. In 1999, the society incorporated a new RARS and obtained 501(c)(3) non-profit tax status.

The objectives of the club are to promote worldwide friendship through amateur radio; to be of public service by providing radio communications in times of disaster, emergency, or civic needs; to educate members in radio technique, and to provide training classes to assist in obtaining amateur radio licenses.

Anyone interested in amateur radio is eligible to apply for membership. Dues for regular licensed amateurs are \$18 per year (from July 1 through June 30). Additional immediate family members pay \$5 each per year. Dues for licensed amateurs older than 59 or younger than 16 are \$12 per year. Dues for non-licensed associate members are \$9 per year. Applications for membership may be obtained from the treasurer or on the RARS website.

<https://www.rars.org>

Exciter

The Exciter is the official newsletter of the Raleigh Amateur Radio Society. It appears each month as a PDF on the RARS website at www.rars.org. Members receive email notification when the latest version is available. Please provide your email address to the Treasurer.

The Exciter welcomes articles, advertisements, and other contributions. To submit a piece to the newsletter, please contact the Editor. The Editor reserves the right to edit any and all pieces. The submission deadline for each month's Exciter is the Saturday that is ten days before the general meeting. All submissions must be final. Drafts are not accepted.

The views expressed in the Exciter are those of the individual authors and do not necessarily reflect the views of the Editor or RARS.

Tom Lewis, N4TL, editor (editor@rars.org)

For Your Information

RARS General Meeting

Date: Second Tuesday of each month

Location: Ridge Road Baptist Church 2014
Ridge Road Raleigh, NC, 27607

Time: People begin arriving at 7 p.m. The
meeting officially begins at 7:30 p.m.

RARS Monthly Dinner

All members and guests are welcome to the monthly (first Tuesday) RARS Supper, 6:30PM, at the CHOW Pizza Bar 8311 Creedmoor Rd, Raleigh, NC. CHOW is behind McDonalds at the intersection of Creedmoor Road and Brennan Drive. We go to the back left in the restaurant. Their private room holds 30-40 and the table layout is flexible. Informal and Dutch, just bring your appetite and best rag to chew.

RARS Repeaters in Raleigh

145.130, 146.640 and 444.525

Join us for the nightly RARS net at 8 p.m. on the 146.640 repeater. All hams holding a Technician class license or higher are invited to check in. We welcome both RARS and non-RARS members to the net.

There is a net Listing on the RARS website click here. <https://www.rars.org/nets.php>

VE Testing

The RARS VEs will accept walk-in testing in February, May, August and November at 5:30PM, prior to RARS membership meetings at Ridge Road Baptist Church; the RARSfest in April; the Cary Swapfest in July; the JARSfest in November; and following RARS license classes. Please bring a photo ID, your original and a copy of your current license, your \$14 exam fee, and any valid CSCEs that prove passing elements beyond that of your current license. Visit <https://www.rars.org> for more information.

RARS Birthdays

Grady	AJ4YA	01/01
Bob	N4GEB	01/01
Brian	K4BMW	01/01
Howard	KI4GNB	01/03
Barry	KK4NUN	01/03
Chuck	K4HF	01/04
Jerry	KE4TTS	01/04
John	WB4DDK	01/04
Joe	KM4WRQ	01/06
John	N4YRD	01/08
Jim	N4CAE	01/09
Lauren	W0LD	01/09
Richard	N1FUA	01/09
Ed	N4ESA	01/09
Beth	KF4QMR	01/09
Joseph	KD2PJP	01/10
Roger	N4KDD	01/11
Joe	N4BJH	01/12
Evan	ZL2TFA	01/14
Bill	KI4BKF	01/15
Marko	KM4ZBT	01/16
Dave	N4CVV	01/19
Marc	W4MPS	01/19
Joe	K4HEW	01/19
Ashby	KB5ZIH	01/20
Dave	N4DSF	01/21
Tyler	KO4BZA	01/23
Alan	AB4OZ	01/30
Cyndi	KD4ACW	01/30
Tom	K2UCU	01/31

New Member

Greg Wallace	KN6KIE
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Presidents Message

President's Message, January 2022

Happy New Year to all! I hope you all had a wonderful Christmas or other holiday you may celebrate. There were many special events for amateur radio operators around the holidays, and I hope many of you were able to participate. I spent a couple of weeks with family, far away from my radios, so I had to miss most the events.

A few months ago, I reported here that the board had decided to cancel RARSfest once again because we were concerned that with COVID, attendance would be low, and that we might not have enough volunteers to staff the event. After attending some other hamfests and speaking to their organizers, board member Tadd Torborg KA2DEW and club member Nancy Torborg KB2TNR proposed to the board that we reconsider. Nancy, who has prior experience organizing events, volunteered to act as RARSfest chair if authorized by the board.

The board held a special board meeting in December and approved the proposal, so **RARSfest 2022 is back on!** It will be the usual date, the Saturday before Easter, April 16. We are excited and apprehensive. Much depends on unpredictable factors such as virus outbreaks and availability of volunteers. Attendance at recent hamfests locally and nationally has been lower than before COVID. Nonetheless, we believe that RARS members and other hams are eager for regular hamfests to resume.

Most volunteer shifts are only two hours. If hamfests are fun and important to you, please consider taking one or two shifts. The volunteer sign-up page for RARSfest will soon be updated and ready for 2022. I'll let you know when it is ready, so you can read the descriptions of the many jobs that need to be filled and make your plans accordingly.

Between now and RARSfest, there are a couple of other noteworthy events. One is Winter Field Day, on January 29-30, 2022. RARS doesn't sponsor a WFD station, but it is open to any ham on most bands and most operating modes. Club stations may operate under special rules in force because of COVID. Rules and other information are here: <https://www.winterfieldday.com/links>

RARS is proud to have a role in sponsoring the North Carolina QSO Party, on February 27, 2022. Operating categories are Single Op, Multi Op, Mobile, and Expedition. Most bands between 80 meters and 2 meters and most modes can be used. There is no category for club stations, but hams may operate together under the Multi, Mobile, and Expedition rules. You can find all the information and rules here: <https://ncqsoparty.org/> I'm probably going to be working single op phone again this year, and am looking forward to it.

John Honeycutt N8ZU

December 14 , 2021 RARS meeting

The meeting was held on Zoom, as we have been since the covid-19 pandemic started. Many members connected from 7PM on. President John Honeycutt, N8ZU, ran the formal part of the meeting. See the meeting minutes on [page 15](#) for details. After the formal part of the meeting. Tom, N4TL introduced Zach Thompson, KM4BLG. Zach gave a presentation "Intro to Meteor Scatter.



Screen captures during the presentation

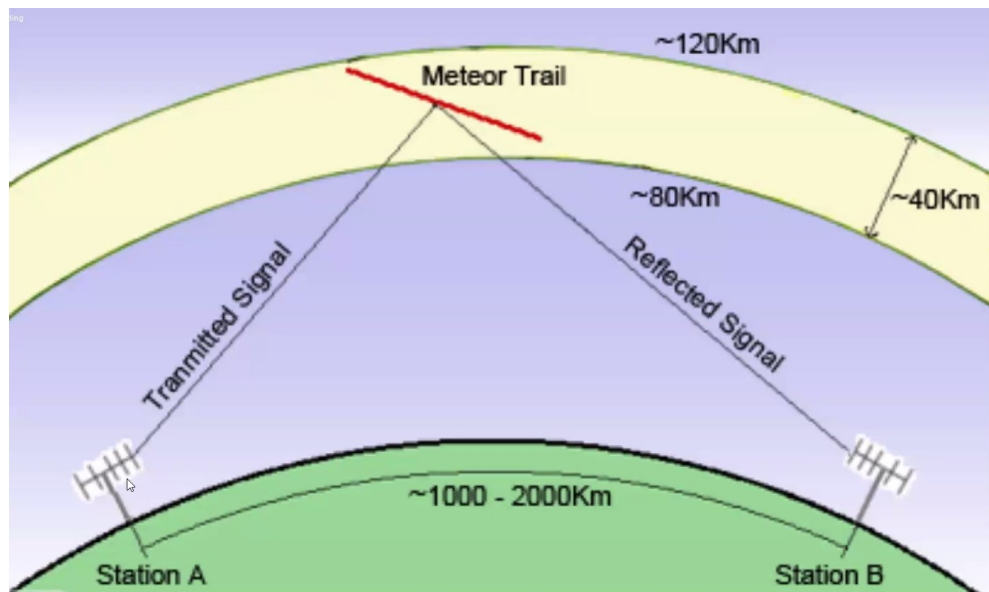
What is Meteor Scatter?

When meteors enter Earth's atmosphere, they leave a trail of ionized particles.

These ionized particles create a temporary "mini ionosphere".

These trails create a brief change in propagation that allows radio signals to reflect and propagate over long distances.

These bursts of propagation are often referred to as "pings"



What does meteor scatter look like?

Typically done on VHF/UHF with most activity on 6m and 2m.

Pings typically last from a few milliseconds to a few seconds.

Lower frequencies have longer pings.

Many modes of meteor scatter propagation rely on "rapid fire" transmissions - sending the same information quickly and repeatedly until a meteor finally allows the signal to propagate.

Meteor scatter propagation is almost always present, with the best times being early morning before dawn, and during meteor showers

Screen captures during the presentation

October 12 , 2021 RARS meeting presentation continued

Traditional Meteor Scatter - HSCW & SSB

Traditional meteor scatter relied on high speed CW - at speeds of 200 WPM or greater

Operators would typically record the transmissions they received, so that they could play them back at a slower speed to copy the CW.

Some operators have been successful with SSB on 6m by keeping transmissions short, especially during meteor showers.

Most modern meteor scatter is found on digital modes.

MSK144 & FSK441

FSK441 was one of the first digital modes built specifically for meteor scatter

MSK144 operation is nearly identical, but the protocol offers key performance improvements over FSK441.

A short message is transmitted repeatedly and rapidly for a predetermined amount of time on a cycle (typically 15 seconds).

Other stations receive this message and transmit on the alternate cycle

North and West bound transmits on odd cycles, South and East bound transmits on even cycles

WSJT-X

Free digital mode software written by Joe Taylor, K1JT

Contains several digital modes including FT8, WSPR, and MSK144

Most modes rely on simple exchanges; call sign, grid square, signal report, and 73

Good performance in poor propagation conditions and at weak signal levels

Automatic reporting to PSKReporter allows you to see where your signal was "heard"

Screen captures during the presentation

October 12 , 2021 RARS meeting presentation continued

Equipment

SSB Transceiver - Preferably running 100W or more

Antenna - Typically a highly directional Yagi

Computer Running WSJT-X or MSHV Software

Sound Card Interface to Connect Radio and Computer

Patience and lots of coffee

Meteor Showers

Shower	Period of activity	Maximum	ZHR	Velocity (km/sec)
Quadrantids	Jan 1-5	Jan 03	120	42
April Lyrid	Apr 16-25	Apr 22	15	48
E-Aquarids	Apr 19-May 12	May 5	60	66
Arietids	May 29-June 19	June 7	60	37
z-Perseids	May 20-July 7	June 9	40	30
d-Aquarids	July 12-Aug 19	July 28	20	41
Perseids	July 17-Aug 24	Aug 12	100	60
Orionids	Oct 2-Nov 11	Oct 21	20	66
Leonids	Nov 14-21	Nov 17	20	71
Gemenids	Dec 7-17	Dec 14	110	35

Screen captures during the presentation

October 12 , 2021 RARS meeting presentation continued

Ping Jockey Central

Chat room built specifically for hams running meteor scatter

Great for finding out who is transmitting where, to know who to listen for

Many users often send brief thank you messages after a QSO is complete

The screenshot displays the WSJT-X v2.1.2 software interface. The top menu bar includes File, Configurations, View, Mode, Decode, Save, Tools, and Help. The main window is divided into two primary sections: Band Activity on the left and Tx Messages on the right. Both sections feature a table with columns for UTC, dB, T, Freq, and Message. The Band Activity table shows a list of received signals, while the Tx Messages table shows transmitted signals. Below these tables are various control buttons such as Log QSO, Stop, Monitor, Erase, Decode, Enable Tx, Halt Tx, and Tune. The bottom section of the interface includes a frequency display (28,365 000), a DX Call field (2E0XXO), a DX Grid field, a date and time display (2019 dec 11 20:48:56), and a Generate Std Msgs section with a list of message templates and a Tx button.

UTC	dB	T	Freq	Message
204030	0	0.8	1492	PE4BAS 2E0XXO +12
204030	1	2.0	1490	PE4BAS 2E0XXO +12
204030	2	2.1	1492	PE4BAS 2E0XXO +12
204230	0	3.4	1492	PE4BAS 2E0XXO +12
204230	1	3.4	1492	PE4BAS 2E0XXO +12
204330	-4	12.9	1490	PE4BAS 2E0XXO +12
204500	0	5.2	1493	PE4BAS 2E0XXO RRR
204700	3	13.2	1490	PE4BAS 2E0XXO RRR
204700	4	13.8	1490	PE4BAS 2E0XXO RRR
204830	2	0.8	1487	PE4BAS 2E0XXO 73
204830	4	1.7	1487	PE4BAS 2E0XXO 73

UTC	dB	T	Freq	Message
204015	Tx		1500	CQ PE4BAS J033
204045	Tx		1500	CQ PE4BAS J033
204030	2	2.1	1492	PE4BAS 2E0XXO +12
204145	Tx		1500	2E0XXO PE4BAS R+02
204215	Tx		1500	2E0XXO PE4BAS R+02
204230	0	3.4	1492	PE4BAS 2E0XXO +12
204230	1	3.4	1492	PE4BAS 2E0XXO +12
204245	Tx		1500	2E0XXO PE4BAS R+01
204315	Tx		1500	2E0XXO PE4BAS R+01
204330	-4	12.9	1490	PE4BAS 2E0XXO +12
204345	Tx		1500	2E0XXO PE4BAS R-04
204415	Tx		1500	2E0XXO PE4BAS R-04
204445	Tx		1500	2E0XXO PE4BAS R-04
204500	0	5.2	1493	PE4BAS 2E0XXO RRR
204515	Tx		1500	2E0XXO PE4BAS 73
204716	Tx		1500	2E0XXO PE4BAS 73
204745	Tx		1500	2E0XXO PE4BAS 73
204815	Tx		1500	2E0XXO PE4BAS 73
204830	2	0.8	1487	PE4BAS 2E0XXO 73
204830	4	1.7	1487	PE4BAS 2E0XXO 73
204845	Tx		1500	2E0XXO PE4BAS 73

Screen captures during the presentation

December 14 , 2021 RARS meeting

 TL Tom Lewis, N4TL	 CD Carl Davis	 K- K4HM - Hank
 Mark - KM4JRG W. Ral (Host)	 CS Charles Strickland	 KN KB2TNR Nancy T
 Z- Zach - KM4BLG - Asheville	 C Charley-KE4QBW-Raleigh	 LK Larry K4LXV Raleigh
 CK Chuck, K4HF - Raleigh	 CD Chuck-K4RGN	 LW Lee N4WYE
 A- Aaron - KN4ORB	 CK Cliff KA7NSU	 LR Lee Rogers WB4DRJ
 AK AD4GX ken Raleigh	 DW dennis wz0q	 MK Mike KN4DRN
 AG AJ4YA. Grady	 D DWade Daniel kk4ugy franklinton	 N n4mqu
 AA Alan AB4OZ RALEIGH	 E- Eric - NR4O - Cary	 RK Richard K7RLH Apex
 BK Billy Ke4vnc	 GK Gordon km4gbf Apex	 RN Richard N1FUA Apex
 B Bob	 JK Jay KM4EP	 SW Steve W4MGT
 B- Bill - W4WHW	 JK Jeremy K2HJX Raleigh	 T(Tadd (KA2DEW) Torborg
 BN Bob. N4GEB	 JK Jerry KE4TTS	 T Tom - NC4TS - Lake Royale
 BK Brantley K4CBW	 JK Jim KM4WRK, Raleigh	 T Tony K1OC Cary
 BY Brian Young - KA9QJT	 JB Joe N4BJH Wake Forest	 TY Tyler KO4BZA
 BW Bruce Woodry W8TWT Raleigh	 JH John Honeycutt N8ZU (Raleigh,..	

44 people attended the zoom meeting

Future RARS Meeting Topics

Titles, topics, and speakers **subject to change**.

Date	Topic	Presenter
1/11/2022	3D printing	Paul Holzworth KD4BFN
2/8/2022	The DSR Transceiver comes of age – a comparison: IC-7300 vs FTdx101D, plus Free Remote Station Operation	Gary Schwartz, K3OS of Hickory, NC

During the Zoom meetings please keep
your microphone muted.

Please edit your name so your
Name, Call and Location are shown.

The next few meeting of RARS will be held using Zoom at 7:30PM. Zoom is a conferencing application that runs on computers, tablets and phones. The meeting ID will be sent out to everyone via email.

Quick start guide for new Zoom users

https://support.zoom.us/hc/en-us/articles/360034967471-Quick-start-guide-for-new-users#h_b0c98dfa-d90f-486d-9617-71ab7b41a273

Zoom help center

<https://support.zoom.us/hc/en-us>

RARS Membership links

Use the following link to verify / update your membership profile.

<https://www.rars.org/userprofile.php>

Use the following link to renew your membership.

https://www.rars.org/membership_renewal.php

HAM RADIO LUNCHEON

Everyone is welcome!

Every Thursday at 11:30 am

New York Diner, 909 McKnight Drive Knightdale.

Check the latest information on the AB4OZ QRZ entry.

[QRZ.COM](https://www.qrz.com).

Hamfest Calendar

For details go to <https://www.arrl.org/hamfests/search>

Free AB4OZ Hamfest, Weather permitting

The free AB4OZ Hamfest will be Saturday, March 26, 2022. Setup at 9AM. Start time is 10AM. New location, Golden Corral Restaurant rear parking lot. 3551 Grenelle street, Raleigh NC 27603.

Check the latest information here [QRZ.COM](https://www.qrz.com).

<https://www.rars.org>

RARS Classifieds

Copied from <https://www.rars.org/classifieds.php>

The items below were listed within the last 30 days on the RARS website.

Check the RARS Classified List on the RARS website regularly for new items.

Two items for sale

Posted January 3rd, 2022 by: N4TL

Contact: n4tl2@yahoo.com

1. Heil HM-5 Microphone, 4 Pin XLR and short stand, with CC-A-KW and cable for Kenwood radios. \$50.
2. Johnson Adventurer, works, \$85

contact me by email 73 N4TL

SB-220 AMPLIFIER FOR SALE

Posted January 1st, 2022 by: AC1Y

Contact: ac1wye@gmail.com

I have for sale my Heathkit SB-220 Amplifier. It includes many Harbach upgrades: Soft-Start Module; Rectifier-Filter Board; HV Capacitor Bank; Fan Upgrade; Replacement T/R Relay. All Harbach Docs are included, with the Heathkit Manual. I have also installed a Standby/Operate Switch in a new Sensitivity Pot, and have carefully labelled the Front Panel for this handy accessory switch. Also included is an additional pair of Eimac 3-500Z Tubes, in addition to the tubes installed in the Amplifier. This amp ran fine before I stored it in 2019. Price is \$800 firm. Please contact Sandy, AC1Y. I'm good on QRZ and the RARS Roster. You can call me at 919-625-7181.

RARS Classifieds continued

Gould OS-255 15MHz Dual Channel Oscilloscope

Posted December 12th, 2021 by: W4MGT

Contact: jenx4321@gmail.com

Gould OS255 15 MHz 2 channel, dual channel, oscilloscope. Includes soft case. \$25

Misc Ham Radio Gear

Posted December 11th, 2021 by: K4HF

Contact: k4hf@arrl.net

1. Diamond Model GZV4000 power supply, 5V TO 15 VDC AT 40 Amps continuous with built in speaker for your radio. As new condition - \$75
2. Two pair of Kenwood HS-4 Mono Communication Headphones, vy good condx - \$40
3. MFJ 945E 300 Watt 160 thru 10 Meter Antenna Tuner w/manual excel - \$75
4. Comet Model SBB5 2M/440 black Mobile Whip with SO-239 Connector - \$ 20

Contact me by e mail, preferred, or (919) 872-6555, Thanks, Chuck



RARS Board Meeting Minutes

The minutes will be published after they are approved by the board in the January meeting.

RARS Membership Meeting Minutes – December 14 , 2021

14 December, 2021 - 7 PM via Zoom

Call to Order: John Honeycutt

Pledge of Allegiance recited.

John invited guests, new members and those who had not attended a meeting recently to introduce themselves. He also invited those who had been recently licensed or had a license upgrade to introduce themselves as well.

1 guest: KM4BLG – Zack Thompson

A quorum was present.

November minutes approved.

Officer Reports:

- President – Announced that the BoD made the decision to hold RARSfest 2022. Nancy Torborg has volunteered to lead the effort. The next BoD meeting will be next Tuesday; also on Zoom. Contact John to get on the agenda.
- Vice President – Jan. 11 meeting topic will be 3D printing.
- Secretary - [No report.](#)
- Treasurer - No report.
- Repeater Chair - No report.
- Exciter Editor – No report.
- Net Manager - No report.
- The Public Service Director Requested volunteers for RARSfest 2022.
- Field Day Chair - No report.
- ARRL Liaison - No report.
- Youth Director – Brantley West noted upcoming youth events. He also mentioned the ARRL annual scholarship program.
- At large director - Alan Pitegoff – Announced the upcoming hamfests.

[Jump back to page 5](#)

RARS Membership Meeting Minutes – continued

At large director – Ken Latchum - No Report.

- At large director – Tadd Torborg - No Report

Special Announcement:

Chuck Littlewood – Installed new Officers and Board members.

Program

Tom Lewis introduced tonight's program, "Meteor Scatter". presented by Zack Thompson
KM4BL

Additional Comments

Carl noted Straight Key Night, coming Jan. 1.

The meeting adjourned at 8:35 PM Eastern Time.

Respectfully Submitted,

Mark Kilmer
RARS Secretary

RARS Monthly Dinner, NEW LOCATION

All members and guests are welcome to the monthly (first Tuesday) RARS Supper, 6:30PM, at the CHOW Restaurant, 8311 Creedmoor Road, Raleigh. The restaurant is at the corner of Brennan Drive and Creedmoor Roads, behind McDonalds. After entering the restaurant, go to the left rear to the private room. Informal and Dutch, just bring your appetite and best rag to chew. "Your attendance will help us retain the private meeting room."